Policy Issues and Alternatives Facing the Canadian Hog Industry

Agriculture Canada

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A Report for the National Workshop on Hog Marketing Alternatives

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PREFACE

The Canadian Pork Council on September 26, 1985, submitted to the federal Department of Agriculture a proposal for the study of specific market organization alternatives for the Canadian hog sector.

The objective of the study was to review the current situation, to examine future national and regional prospects for the hog/pork sector over the intermediate term and to identify some potential impacts of policy alternatives.

This document is a summary of the principal findings of two independent analysts, J.C. Gilson and R. Saint-Louis, who conducted the study. This summary of their study has been prepared as a background document for the National Workshop on Hog Marketing Alternatives, to be held on February 26 and 27 and sponsored by Agriculture Canada and the Canadian Pork Council.

Publication of this summary does not imply endorsement of the conclusions by Agriculture Canada or the Canadian Pork Council.

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POLICY ISSUES AND ALTERNATIVES FACING THE CANADIAN HOG INDUSTRY

1.0 INTRODUCTION

There can be no question that the shape and character of the Canadian hog industry by the year 2000 will be influenced by the policy decisions made in the 1980s.

Decisions made in the 1920s to establish a premium-quality bacon hog influenced policies and programs in the Canadian hog industry for several decades. Decisions taken in the 1950s and 1960s to establish provincial hog marketing boards pointed hog producers in a particular direction and had an important influence on the production and marketing activities of the Canadian hog industry. Actions taken by several hog marketing boards in the 1970s to open up the Japanese hog market for Canada's pork products provided oppportunities for expansion that had not been anticipated or seriously discussed a few years before.

Whether opportunities and challenges or short-run problems and issues will dominate the policy agenda in the 1980s remains the ultimate responsibility of Canadian hog producers themselves.

This summary document first describes the current situation facing the Canadian hog/pork industry. It notes present achievements and some of the structural changes to the industry that were instrumental in attaining them.

The next section raises some problems encountered and options developed to overcome them during this evolution of the industry. These included greater bargaining power for hog producers and countervailing duties imposed by the U.S. government.

Then follows an outline of the legislative framework governing the industry. The federal and provincial governments each have had stabilization support policies governing the hog/ pork industry. To overcome conflicts between them, the federal government has joined with some provinces to come together with producers to form a national tripartite stabilization program. Supply management offers another alternative to reducing industry problems.

The major portion of the summary outlines the policy simulations evaluated in the hog/pork study sponsored by Agriculture Canada and the Canadian Pork Council. The time frame considered is the intermediate future 1986-91. The major policy options considered are the status quo situation of continuing present government policies

unchanged, removal of all government intervention in the marketplace, introduction of national tripartite stabilization, and adoption of supply management in the hog/pork industry under the 1972 Farm Products Marketing Agencies Act.

2.0 STRUCTURAL CHANGE IN THE CANADIAN HOG INDUSTRY, 1970-85

2.1 Production sector

During the past 15 years, recurring and wide fluctuations in hog numbers have characterized the Canadian hog production industry. Canadian hog production reached a peak of 10 million head on farms in the early 1980s. This level was up from 5 million head in the mid-1970s, with an earlier, brief rise to 8 million head in the early 1970s (Table 1).

TABLE 1 REGIONAL DISTRIBUTION OF HOG PRODUCTION, CANADA, 1961-85

	1961	1971	1976	1981	1985
	(thousand head)				
Atlantic	150.4	251.6	205.8	364.8	424.5
Newfoundland	1.5	14.6	15.7	19.1	17.5
Prince Edward Island	54.9	100.9	78.1	116.8	128.0
Nova Scotia	46.9	79.8	72.7	139.3	155.0
New Brunswick	47.1	56.3	39.3	89.6	124.0
Central	2 598.4	3 745.3	3 517.6	6 606.6	6 720.0
Quebec	912.1	1 383.6	1 613.1	3 440.8	3 335.0
Ontario	1 686.3	2 361.7	1 904.5	3 165.8	3 385.0
EAST	2 748.8	3 996.9	3 723.4	6 971.4	7 144.5
Prairies	2 542.3	4 031.4	1 991.7	2 648.7	3 370.0
Manitoba	431.5	1 070.6	625.0	875.0	1200.0
Saskatchewan	640.8	1 145.3	490.4	574.3	705.0
Alberta	1 470.0	1 815.5	876.3	1 199.4	1 465.0
British Columbia	41.6	78.6	53.0	254.9	270.0
WEST	2 583.9	4 110.0	2 044.7	2 903.6	3 640.0
CANADA	5 332.7	8 106.9	5 768.1	9 875.0	10 784.5

Sources: Statistics Canada and Agriculture Canada.

These changes were not uniformly distributed across the regions of Canada. During the past 15 years, there was a significant shift in hog production to eastern from western Canada. The proportion of the national hog production in Quebec increased from 17% to 31%, while

that in the Prairies declined from 45% to 32%. Inventories of hogs on farms in eastern Canada rose considerably from 2.7 million head in 1961 to 7.4 million head in 1984. Inventories fluctuated in western Canada between 2 and 4 million head, averaging about 3 million head over the period.

The average size of hog operations at the individual farm level has more than tripled during the past 15 years. In fact, in just one five-year period between 1976 and 1981, the average number of hogs per farm went up from 91 to 177 (Table 2). Meanwhile the number of farms raising more than 123 head each rose by 50% (Table 3). Although only one hog in 10 was found on a small hog unit in 1981, these small units represented 84% of all hog producers. In comparison, 3.6% of hog producers raised 40.4% of hogs.

Again, there were regional variations. The largest increase in average herd size was observed in Quebec, while Saskatchewan farms showed the least increase in average herd size.

As a source of farm income, hog production in Canada had attained 10.9% of farm cash receipts in 1951. This level underwent a period of relative decline during the next 30 years, then recaptured 10.5% of total national agricultural receipts by 1982. The total value of Canadian hog production in farm cash receipts was nearly $2 billion in 1982 (Table 4).

TABLE 2 AVERAGE NUMBER OF HOGS PER FARM REPORTING, CANADA, CENSUS YEARS 1951-81

	1951	1961	1966	1971	1976	1981
						(head)
Prince Edward Island	10	14	29	49	67	110
Nova Scotia	4	12	27	63	88	183
New Brunswick	5	9	12	33	42	106
Quebec	13	19	38	79	178	430
Ontario	19	30	46	77	102	172
East	14	24	41	75	122	239
Manitoba	10	20	31	75	103	172
Saskatchewan	9	16	18	44	40	63
Alberta	19	36	38	69	70	121
British Columbia	8	15	17	29	27	109
West	12	24	29	59	62	109
Canada	13	24	35	66	91	177

Source: Statistics Canada.

TABLE 3 HOG FARM SIZES, CANADA, CENSUS YEARS 1961-81

	Number of head in each size category				
	0-17	18-122	123-527	528-plus	Total
Number of farms reporting (000)					
1961	135.8	83.1	4.5	0	223.4
1966	85.8	60.4	7.5	0.6	154.5
1971	52.3	54.2	14.2	1.6	122.5
1976	32.0	21.2	8.3	2.1	63.6
1981	23.1	17.4	10.4	4.9	55.8
Distribution by category (%)					
1961	60.8	37.2	2.0	0	100
1966	55.6	39.1	4.9	0.4	100
1971	42.7	44.2	11.6	1.5	100
1976	50.3	33.4	13.0	3.3	100
1981	41.5	31.2	18.6	8.7	100

Source: Statistics Canada.

TABLE 4 COMPARISON OF FARM CASH RECEIPTS FOR HOGS AND ALL FARM COMMODITIES, CANADA, CENSUS YEARS 1951-81 AND 1982

	Farm cash receipts		Value of hogs as a share of all farm products
	Hogs	All farm products	
	($ million)	(%)	
1951	190.0	1 740.7	10.9
1961	218.1	2 346.7	9.3
1971	400.0	4 548.0	8.8
1981	16 26.0	18 681.3	8.7
1982	19 56.1	18 711.0	10.5
1983	17 13.4	18 745.8	9.1
1984	18 88.4	20 315.7	9.2
1985	18 22.0	19 879.0	9.2

Sources: Statistics Canada and Agriculture Canada.

There has lately been a marked reduction in the traditional seasonal and cyclical fluctuations in hog production in Canada. This change may be explained in part by such factors as the increasing degree of specialization that has taken place, the high investment in fixed capital investment and technological changes in production practices.

Year-to-year fluctuations in Canadian com-mercial hog production seem to have increased and decreased more or less simultaneously with the U.S. hog production cycles. They generally repeat a pattern, with two years of low average slaughter and higher average hog prices, followed by two years of high average slaughter and lower hog prices.

Recent calculations of financial risk profiles of Canadian farmers in several agricultural sectors have been made by regrouping farming units on the basis of their debt-to-asset ratios. These calculations indicate that financial stress among Canadian hog producers was still definitely the major ongoing issue of this sector by the end of 1985. They also indicate that this will likely remain a major issue to which more than usual attention has to be paid in coming years.

2.2 Slaughtering and processing sector

There has been a slow but steady increase in the number of hog slaughtering and processing plants in Canada. Regionally, the industry is most heavily concentrated in Ontario, Quebec and Alberta (Table 5). The high labor-to-capital ratios and high final-demand multiplier for the industry have encouraged some provinces to invest public money in this sector for regional development objectives. However, this may conflict with private sector objectives for rationalization of the industry and with federal and some provincial objectives for limited interference in industry location decisions.

Technological developments have led to major changes in the structure and nature of operations in the slaughtering and processing industry in Canada. Old plants have been replaced with modern facilities, while other plants have been completely transformed.

Highly automated types of processing equipment and techniques have led to the consolidation and centralization of certain kinds of meat processing. Certain pork products now are trimmed, moved to a cut table, inject-cured, conveyed to a smokehouse, then moved through a chill tunnel, automatically formed, sliced, packaged, palletized and warehoused for shipment in less than a day. Cooked meats now are prepared in integrated and costly automated equipment that runs continuously. They are conveyed through microwave defrost, chop- ground in 10 000 pound batches, cooked and smoked, sliced, vacuum-packed and laced in a warehouse. Vacuum

packaging for extended shelf life has altered delivery times and packaging techniques. This has led to concentration of processing in larger plants, with the possibility of nationwide distribution.

TABLE 5 RED MEAT SLAUGHTERING AND PROCESSING PLANTS, CANADA, SELECTED YEARS

	1960*	1970	1981 Total	1981 Under fed/prov inspection	1984 Under fed/prov inspection
Atlantic	13	29	21	12	11
Quebec	63	133	130	46	37
Ontario	73	150	181	49	51
Manitoba	13	28	32	36	20
Saskatchewan	10	22	32	17	18
Alberta	21	42	64	32	36
B.C. 17	44	41	11	14	
Canada	210	448	505	203	187

* does not include 98 sausage and sausage casing plants or 18 animal lard and fats plants, which would bring the total for 1960 to 326 plants

Sources: Statistics Canada and Agriculture Canada.

Technological changes in the slaughtering and processing industry in Canada are far from over. Significant changes in this industry can be expected during the years ahead. Indeed, technological developments further upstream in the retail sector of the economy will no doubt have significant implications for both hog producers and for the processing and slaughtering industry.

Ownership in the industry is becoming less concentrated overall. In 1980, the eight largest enterprises accounted for only 53% of industry sales in slaughtering and meat processing. Larger integrated operations are running into difficulties with reduced profitability of their kill-and-cut lines in diversified operations and with competition from specialized processing plants producing a limited product line. Expansion in employment has been largely concentrated in smaller and more specialized units. At the same time, however, the number of major packers killing and processing the bulk of production in most provinces is declining.

The hog/pork industry is an important generator of employment in Canada. More than 35 000 persons are employed directly in the

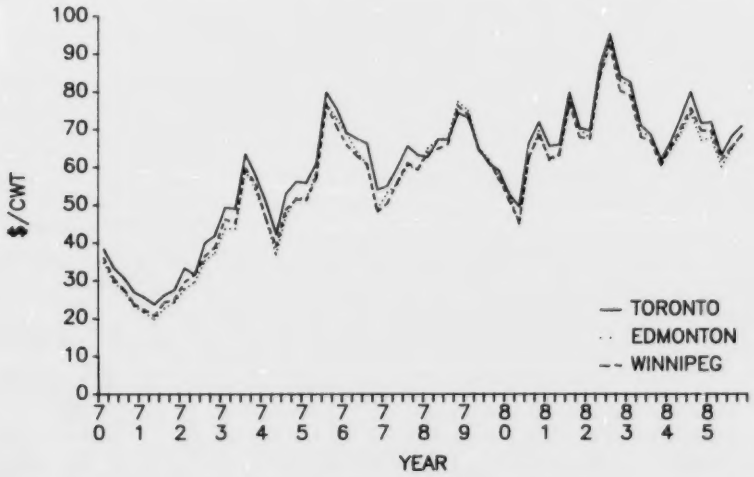
slaughtering and processing industry. These together with others employed in related sectors serving the industry comprise a significant part of Canada's employed labor force.

2.3 Marketing sector

In theory, in a competitive market system, prices in a deficit market should not exceed those in a surplus market by more than the transportation and handling costs of moving the product to areas where there is a shortage.

Nevertheless, there have been large price spreads between eastern and western Canadian markets. Toronto hog prices during 1970-86 have generally been consistently above those in all other Canadian hog markets. The one exception was during 1978 Q4 through 1979, when the Toronto price dropped significantly below the market price in Winnipeg and Edmonton (Figure 1).

FIGURE 1 PRICES FOR HOGS, DRESSED WEIGHT, SELECTED MARKETS, CANADA, 1970-85



In the North American market for hogs and pork products, Canadian hog prices have tended to vary closely with hog prices in the U.S. During the 1970s, Canadian hog prices tended to be marginally above the corresponding U.S. prices. Beginning in 1982, however, U.S. hog prices in Canadian-dollar equivalent began to exceed Canadian hog prices by a considerable margin. During 1984-85, this margin varied between $6.65/cwt and $12.53/cwt (Figure 2).

Per capita consumption of all red meats and poultry products in Canada has changed significantly since 1970 (Figure 3). Pork consumption in Canada peaked in 1980 at 69.1 pounds. During 1980-83, however, per capita pork consumption declined significantly, then leveled off. At the same time, per capita consumption of beef also trended downward, whereas that of poultry continued to increase. It is difficult to pinpoint why per capita pork disappearance has held steady in recent years, despite competition from other products.

Provincial slaughter/consumption self- sufficiency ratios indicate that Quebec and Manitoba have lately contributed the most to the expansion of interprovincial trade in pork commodities within Canada. Ontario and Alberta have barely managed to hold onto their relative market shares.

In terms of provincial self-sufficiency, Manitoba in 1985 produced 212% more pork than it consumed, while British Columbia produced only 45% of its provincial consumption of pork. Quebec increased its level of pork production from a shortfall of 30% of its provincial requirements in 1970 to a surplus of 86% in 1985. The Atlantic provinces continue to produce approximately one half of their provincial consumption (Table 6).

TABLE 6 COMPARISON OF DISTRIBUTIONS OF POPULATION AND PORK SLAUGHTER, CANADA, 1985

	Population	Pork slaughter
	(%)	
British Columbia	11.6	2.1
Alberta	9.4	12.4
Saskatchewan	4.0	4.1
Manitoba	4.2	8.4
Ontario	35.4	31.5
Quebec	26.3	37.3
Atlantic	9.1	4.1

Source: Statistics Canada

FIGURE 2 PRICE SPREAD FOR HOGS, DRESSED WEIGHT, TORONTO AND U.S. SEVEN MARKETS, 1970-85

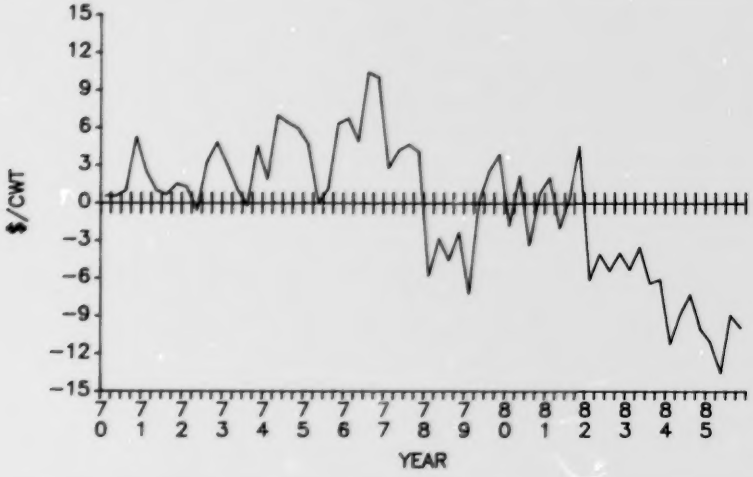
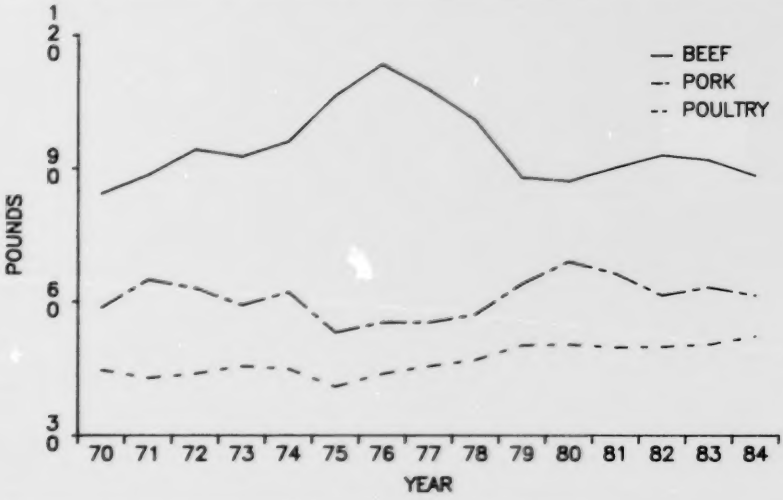


FIGURE 3 PER CAPITA MEAT CONSUMPTION, CANADA, 1970-84



Major interprovincial net trade flows in hogs from producers to processors is shown in Table 7. The largest interprovincial hog flows are from Ontario to Quebec. This is attributed to the faster growth of killing and/or processing capa-city in Quebec, which was able to accommodate the significant increase in hog raising in Ontario more readily than could Ontario-based plants. Alberta-to-B.C. hog flows have been declining in recent years, except during the labor disputes affecting the Alberta industry during 1984-85. Net hog trade flows between Saskatchewan and Manitoba were in equilibrium from 1974 to 1983 but, despite the recent resurgence of a net positive flow from Saskatchewan to Manitoba, it has fallen behind third-place Quebec-to- Maritimes net hog trade flows.

TABLE 7 SELECTED INTERPROVINCIAL HOG TRADE FLOWS, CANADA, 1970-85

	Net shipments			
	Alberta to B.C.	Saskatchewan to Manitoba	Ontario to Quebec	Maritimes to Quebec
	(thousand t)			
1970	101.5	147.2	163.3	-10.5
1971	96.5	49.3	140.6	-13.6
1972	66.6	47.8	150.6	-7.4
1973	51.0	19.8	131.5	-3.9
1974	42.8	0.7	54.6	-6.3
1975	26.0	-5.3	42.5	-5.5
1976	5.5	-18.6	76.5	-3.6
1977	3.5	-5.0	85.5	-4.6
1978	5.9	-34.6	160.6	-1.3
1979	9.8	-1.0	231.1	0.3
1980	1.9	-0.8	122.6	9.7
1981	-5.5	-1.8	187.5	11.6
1982	-25.7	-0.7	132.3	14.4
1983	2.0	0.7	123.4	61.5
1984	156.4	29.9	272.5	66.0
1985	199.0	49.8	339.9	60.3

Source: Agriculture Canada.

Since 1976 the Canadian hog/pork industry has become more reliant on the international market. Exports of pork products increased from 32.3 thousand tonnes in 1970 to 175.3 thousand tonnes in 1984 (Table 8). Most of the exports have gone to the U.S. or Japan.

In 1977, the proportion of Canadian pork exports going to Japan peaked at 80%. Since then, the proportions have steadily reversed, with more than 80% of exports in 1984 going to the U.S. and 17% going to Japan.

TABLE 8 VOLUME OF HOGS AND PORK PRODUCTS, CANADA, 1970-85

	Live hogs			Pork		
	Domestic slaughter	Exports	Imports	Domestic supply	Exports	Imports
	(thousand head)			(thousand t)		
1970	10 351.0	88.2	3.9	640.5	32.3	11.9
1971	11 352.0	88.7	0.8	694.1	44.6	8.3
1972	10 997.0	88.7	1.0	685.6	52.4	20.5
1973	10 657.0	90.2	0.8	665.5	57.1	24.6
1974	10 700.0	196.8	0.7	682.1	42.0	31.6
1975	9 164.0	30.7	0.7	596.0	40.8	44.1
1976	8 969.0	45.0	0.9	629.8	39.4	88.9
1977	9 037.0	43.3	0.5	640.6	46.0	91.5
1978	9 940.0	188.0	1.8	678.2	56.4	54.2
1979	12 001.0	131.2	1.1	781.0	79.6	33.4
1980	13 978.0	237.6	0.7	885.7	118.0	17.5
1981	13 582.0	147.3	0.8	874.6	129.0	19.5
1982	13 449.0	305.3	0.5	859.3	163.4	14.5
1983	15 688.0	459.3	0.5	980.8	157.6	19.4
1984	17 951.0	1346.5	0.2	887.7	175.3	14.7
1985	14 431.0	1152.4	0.3	928.6	196.5	17.0

Source: Agriculture Canada.

The fact that nearly 30% of Canada's pork production has been sold in the export market during the last two or three years indicates the critical importance of the international market to Canadian hog producers. At the same time, the "internationalization" of the Canadian hog/pork industry has exposed Canadian hog producers to the economic and political factors associated with the exporting business. Fluctuating exchange rates, import controls, countervailing duties and export subsidies are now a part of the Canadian hog producers' decision-making framework.

One of the primary issues in the Canadian hog industry has been the struggle between hog producers and meat packers for some form of proactive and workable competion in the marketplace.

To make their evolving competitive marketing system perform more effectively, hog farmers have progressed through several phases. The large terminal market where hogs were sold by private treaty between packers and hog producers gave way to hog boards in order to avoid situations where prices paid to individual producers could differ substantially from average market prices, depending on location and time of arrival of the animals.

3.0 PROBLEMS AND OPTIONS

One of the first major policy issues confronting hog producers was their quest for greater bargaining power in the competitive marketing system. They undertook to make the market more competitive by breaking down or curtailing the concentration of power of the buyers, or by developing countervailing power through farmers' cooperatives. Certain hog producer groups called on anti-combines legislation to create greater competition in the marketplace, but found it less effective than they had originally hoped. They therefore turned to other methods to reduce or modify the concentration of buying power in the market.

Cooperative shipping associations for hogs were developed in most provinces, as well as central selling cooperatives for hogs. Other producers' cooperatives entered the meat packing business in competition with the large privately run meat packers. These sought to increase farmers' incomes by raising prices to farmers through more effective bargaining power in the marketplace and by reducing marketing costs.

Still other groups attempted to create compulsory marketing boards. They found voluntary cooperatives failed to develop and sustain effective countervailing power in the marketplace. Loose associations of individuals lacked control over nonmembers or even breakaway members who chose not to wait for higher prices through negotiations but chose to strike their own deals at the expense, in effect, of those who stood by the cooperative. Consequently, the compulsory hog marketing boards have given the Canadian hog producers their most effective form of workable competition in the marketplace.

Since 1971, hog producers have focused their attention primarily on improved forms of government price and income stabilization programs. They have attempted to couple the marketing and pricing practices used by their boards with appropriate government price and income stabilization programs to achieve an adequate and stable income for their industry. Unlike boards in the dairy and feathered products sectors, hog marketing boards have not incorporated the powers of supply management and administered pricing into their marketing system.

Another major concern facing Canadian hog producers relates to the national character of the hog/pork market. Is Canada to have one common market for the production, marketing and pricing of hogs? Or are these basic functions to be determined by 10 separate and independent provincial policies?

In seeking better prices and incomes and greater control over commodity marketing, Canadian agricultural producers are confronted with a divided jurisdiction between the federal and provincial levels of government for legislating marketing policies and institutions. This divided legal jurisdiction has led to a "splintered market" in Canada as provinces have developed their own price, income, credit and trade policies because of what they allege to be serious limitations of federal policies. This proliferation has led to costly, competing and ultimately self-defeating provincial subsidies.

The search for policy alternatives covers a wide spectrum of possibilities, from minimum public intervention in the hog marketing system to policy options that would involve considerable regulation and control of the industry.

The relationships between the federal and provincial governments have become highly interdependent, especially in agricultural policy. Future policy directions for the national industry will depend on a political consensus between the federal and provincial governments.

At the same time, the growing reliance on the international market for hog/pork trade raises issues concerning relationships with other trading partners. In what way can Canada reconcile its domestic agricultural policies, which provide price support and income stabilization in the hog/pork industry, with international trade policies such as those laid out under the General Agreement on Tariffs and Trade, which discourages the use of certain forms of income or price support for exports? Should the industry adopt open trade with com-petitive world markets, or should it deliberately curtail national production to the domestic market behind "protectionist" trade barriers?

Recently, a major barrier entered the Canada-U.S. trade relationship when the U.S. imposed countervailing duties on hog/pork products from Canada. After conducting an enquiry into stabilization and other measures applied to Canadian live hogs and pork commodities in the U.S. market, the U.S. International Trade Commission in 1985 recommended that countervailing duties be imposed to redress for what the U.S. government felt was unfair competitive advantage to Canadian producers. From April to July 1985, pork and live hogs were subjected to countervailing duties; after July, they were continued for live hogs only.

The U.S. countervailing duty has raised a number of basic questions relating to Canada's domestic agricultural policies. What policy adjustments can and should be made if Canada is to have a continuing and unimpeded export of hogs to the U.S.? When is a subsidy or a stabilization program or a regional development policy of purely domestic concern and when is it of legitimate concern to countries with which Canada trades? Should national production be

reduced to match Canadian consumption of pork products, or are there other policies that can and should be adopted to expand export markets for the excess production?

4.0 LEGISLATIVE FRAMEWORK

4.1 Federal and provincial support policies

Current federal agricultural legislation governing the hog/pork sector is centered on the Agricultural Stabilization Act passed in 1958 and amended in 1975.

The 1958 ASA price support level was based on an explicit formula of past prices and provided for 80% of the "designated base price" to be paid, calculated from a moving average of prices for the named commodity for the previous 10 years.

By the early 1970s, however, the ASA came under severe criticism. Farmers felt the price support level established under the ASA was too low to provide farmers with any meaningful level of support and that it was inadequate to deal with depressed farm prices and incomes. They also felt it failed to deal with surpluses in several commodities, inflationary increases in farm production costs and sluggish export markets.

In the attempt to cope with perceived inadequacies of the 1958 ASA, several provinces introduced their own price and income stabilization programs for hog producers during the mid-1970s. Provincial hog stabilization programs were established in Nova Scotia in 1973 and in New Brunswick in 1977. British Columbia established commodity stabilization programs under its Farm Income Assurance Act in 1973. Quebec passed its Farm Income Stabilization Assurance Act in 1975. Saskatchewan implemented its Saskachewan Hog Assured Returns Program (SHARP) in July 1976.

Meanwhile the federal government passed the Farm Products Marketing Agencies Act of 1972. This legislation permitted supply management and administered pricing as an alternative to the traditional price support policies for such commodities as eggs, chickens and turkeys. It permitted commodity marketing boards to conduct orderly marketing, to organize many small producers into more effective bargaining units in their negotiations with a few large buyers, and to prevent vertical integration in order to preserve the family farm. Cattle and hogs were excluded, however, as the majority of the producers had decided they did not want to be part of the national supply management program.

Pressure for amendment of the ASA in 1975 came from the side of farm input costs. Annual inflation rates had reached 9.1% in 1973, 15.3% in 1974 and 10.8% in 1975. The minimum level of support based on a 10-year moving average of previous prices provided under the original ASA no longer provided effective protecion to agricultural producers against the ravages of double-digit inflation.

The ASA was amended in 1975 to provide for a minimum support level for named commodities, including hogs and pork products, based on 90% of average prices during the previous five years and the difference between current cash costs and the average cash costs of the preceding five years.

The amendments also included provision for the federal government to enter into agreements with the provinces to increase the support above the levels provided in the act. This practice became known as provincial "top loading." It permitted the provinces to compensate their farmers for rapid cost escalation, if they felt federal support was inadequate. Moreover, it permitted some provinces to view the red meat industry as one means of encouraging local economic development and job creation.

The top loading provision under the 1975 amended ASA led to considerable discussion and debate between the federal government and the provinces during the ensuing decade. The federal government contended that the top loading provision was leading to a fragmentation of the national market and was causing unnecessary competition among the provinces. Several of the provinces argued that the federal program was not effective in coping with the escalating increase in the producers' input costs. Moreover, the provinces were not willing to surrender control over policies relating to sectors within their jurisdictions.

With continued high levels of inflation after the 1975 amendment to the ASA, cattle and hog producers soon discovered that even the higher price supports calculated under the amended act could not keep pace with the rapid increase in costs of production. The unrest in the hog/pork industry over the inability of the federal price support policy to cope with the farmers' rapidly escalating production costs caused pork producers to turn to other alternatives for redress of their cost/price squeeze. The introduction of the very diverse provincial programs created serious issues with respect to the equitable treatment of producers in the different provinces. These issues eventually encouraged the provinces and the various producer groups to seek a nationally uniform support policy for red meat producers in all parts of Canada, with support from federal and provincial agricultural officials.

4.2 Tripartite stabilization

The federal government in 1984 proposed a tripartite stabilization program for red meats to replace earlier price stabilization programs that were found to be inadequate to meet producers' rapidly escalating farm input costs. It called for the federal government, provincial governments and beef and hog producers to each contribute equally to

the funds required for the operation of a program to provide some minimum form of price support for the cattle and hog producers involved.

Under the proposal, the participating provinces would have up to five years to phase out existing provincial stabilization programs. Premiums and stabilization payments under the agreements would be restricted to the domestically consumed portion of the commodity under the agreement. Support for hog producers under the agreement would be based on the "guaranteed margin" approach. Parity support prices would be set at the cash costs of production in the current quarter plus 95% of the average margin in the same quarter during the preceding five years. The margin for any quarter would be equal to the national average market price for the quarter minus the national average costs in that quarter.

The main advantage would be a uniform support policy for red meat producers in all parts of Canada. A major disadvantage would be loss of provincial control over price support programs for producers.

Although much discussed, the proposal did not meet ready acceptance. A major obstacle was the federal government's insistence that any such plan must eliminate the need for provincial programs to give their producers additional price support over that paid under the national tripartite program. Some provinces, however, insisted on continuing the top loading. Some industry groups feared that a cost of production guarantee would eventually lead to the collapse of the program. Only the federal government and the governments of Alberta, Saskatchewan, Ontario and Manitoba agreed to proceed with the development of the tripartite plan under 1985 amendments to the ASA. Negotiations are continuing with the remaining provinces.

4.3 Supply management

One possible method of overcoming difficulties with low prices and unstable output levels is through supply management, which had been earlier rejected for the industry. This involves establishing centralized control by a voluntary or compulsory board over the quantity produced and/or prices, as permitted under the 1972 Farm Products Marketing Agencies Act.

The goal is to deal with problems of surplus production, low prices, and price and income instability. It may involve control over production through the use of quotas along with negotiation for an annual price with a single buyer of the product. Or it may involve production and marketing quotas, quality, time of delivery, handling charges and price set by a central agency acting under provincial law. Supply management may control and influence producers' production practices or their marketing practices or both.

To be effective, supply management programs must have some element of collective control and compulsory compliance with the regulations associated with the programs. This involves a loss of freedom of decision making on the part of the individual producer. Whether or not and to what extent producers are willing to trade off freedom of individual decision making for higher prices and incomes varies greatly among individual producers and commodity groups.

What do Canadian hog producers have in mind for their industry by the end of the present century, and which policy alternatives will best achieve those long-run objectives? Whether opportunities and challenges, or short-run problems and issues, dominate the policy agenda in the 1980s is perhaps the most important question of all.

5.0 POLICY ALTERNATIVES

Which of the current policy choices facing the Canadian hog/pork industry will bring it the most benefit during the next five years? In order to answer such questions, Agriculture Canada's Food and Agriculture Regional Model (FARM) of the Canadian agriculture industry is used for the analysis undertaken in this study.

Based on this approach, specific policy scenarios are developed and analyzed for the medium-term future from 1986 to 1991. The policy options examined are:

- status quo;
- full tripartite;
- no intervention; and
- supply management.

5.1 Status quo

The future period 1986-91 is based on the assumption that present policies, including all stabilization programs as well as U.S. countervailing duties on hogs that were in place in 1986 Q1, will continue through the intermediate period to 1991.

It is assumed that stabilization payments minus premiums paid to farmers are considered to have an identical response as prices received in the market. In addition, the impact of stabilization payments on levels of production is assumed to influence hog farmers' decisions during the applicable insurance coverage subperiod, rather than during the subperiods in which they are announced and/or actually paid to farmers. Another important factor is the proportion of hog and piglet producers in each relevant provincial program.

Quebec, British Columbia and the Atlantic provinces would maintain their own stabilization programs, and forecasts are made of their premium payment schedules. Premiums collected under the piglet and the slaughter hog programs in Quebec, as well as those pertaining to the British Columbia program, are established to reach a zero cumulative deficit in 1991 Q1. For the Atlantic provinces, the fixed rules under which the values of the premiums are established are retained, which implies that the rules under which the present, fairly large deficit accumulated would remain as they are.

Manitoba, Saskatchewan, Alberta and Ontario are included in the tripartite program. Manitoba is considered to join in the federal tripartite in 1986 Q3, after keeping its own provincial program in operation until 1986 Q2. It is assumed the Manitoba government would absorb the cumulative deficit.

Saskatchewan is considered to join the federal tripartite program while phasing out its pro-vincial program. More precisely, total payments received by Saskatchewan hog producers are assumed to be determined according to a declining schedule. This comprises a declining percentage of the provincial payment, plus the tripartite payment, until 1991. Premiums are set to maintain the cumulative deficit equal to the level in 1985 Q4.

Alberta and Ontario are assumed to be in the national tripartite program, and the Alberta Feed Grain Market Adjustment Program is maintained.

Collection of premiums paid by participants in the tripartite program is assumed to start in 1986 Q3. The level of the premium is established to maintain an actuarially sound fund from 1986 Q3 to 1991 Q1. The participation rate in each participating province is assumed to be 90%.

The support level for the guaranteed margin formula under the tripartite is phased down during the forecast period, starting at 95% in 1986 and declining to 90% in 1991.

Under these circumstances, national hog marketings are projected (as of summer 1986) to reach a record high of about 15.5 million head in 1988, followed by some reduction to about 14.7 million head in 1990. The regional shares in total hog production would remain roughly the same, with one third produced in western Canada and two thirds produced in eastern Canada.

Exports of live hogs would account for about 7.5% of national production, and pork exports would be equivalent to 23.8% of nationally processed pork commodities during 1986-91.

Total farm cash receipts would reach a record high of $1.96 billion in 1987, falling drastically during 1988-89, then recovering to nearly $2 billion in 1990. Total net stabilization payments paid out in 1988, 1989 and 1990 would amount to about $154.7 million, or 2.8% of total farm cash receipts from slaughter hog production. The national weighted price of Index 100 hogs is projected to decline to about $64.30/cwt in 1988.

5.2 Tripartite option

This policy scenario seeks to determine the impact of extending the National Tripartite Price Stabilization Program from coast to coast. It is assumed that U.S. countervailing duties in effect as of early 1986 would continue unchanged.

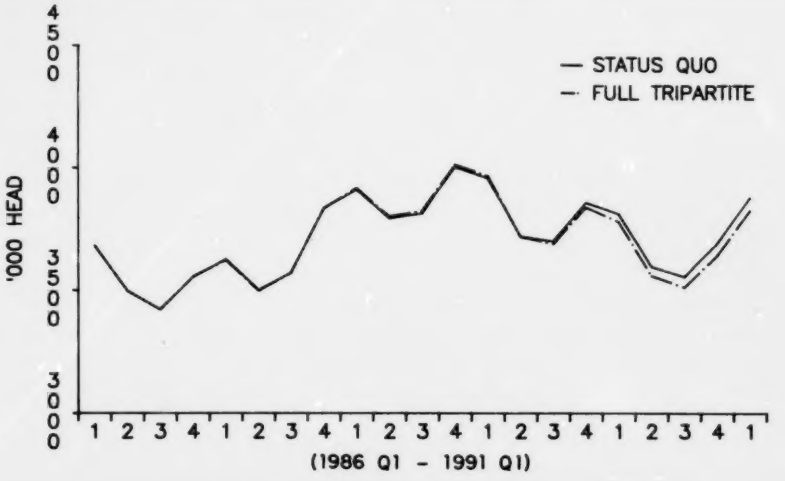
The full tripartite option assumes the tripartite stabilization program would begin in most provinces in 1986 Q1. The latter programs are somewhat difficult to incorporate into the modeling

exercise, especially for British Columbia, Quebec and the Atlantic provinces, which have not yet agreed to participate in the tripartite program. For this reason, the phasing out of those provincial programs has to be carefully established. The proportion of hog producers in all provinces participating in the tripartite program is established at 90%.

For all provinces except Quebec, the existing provincial stabilization programs would end in 1986 Q1. It is assumed that all provincial governments would absorb any cumulative deficits of their programs. For Quebec, it is assumed that it would not join in the tripartite program until 1986 Q2, but that itabilization programs would end in 1986 Q1. It is assumed that all provincial governments would absorb any cumulative deficits of their programs. For Quebec, it is assumed that it would not join in the tripartite program until 1986 Q2, but that it would end its hog and piglet program in 1986 Q1.

The national hog marketings under the full tripartite option would be much the same as for the status quo scenario until 1988 Q1 (Figure 4), then rising by approximatley 1.2% for about a year. Then it would fall below the status quo, with a downturn in the hog cycle beginning in 1989 Q3 and lasting through 1991 Q1.

FIGURE 4 TOTAL HOG MARKETINGS UNDER STATUS QUO AND FULL TRIPARTITE MODELING OPTIONS, CANADA, 1986-91



National changes in pork production under this scenario until 1988 Q1 would be marginal and would come almost equally from eastern and western Canada (Table 9). Finally the fall in total marketings in the latter part of the period would be more severe, in absolute but not in relative terms, in eastern Canada compared with western Canada.

TABLE 9 QUARTERLY PRODUCTION OF PORK UNDER STATUS QUO AND FULL TRIPARTITE MODELING OPTIONS, CANADA, TWO SELECTED TIME PERIODS 1986-91

	Status quo	Full tripartite	Difference	
			Actual	Percentage
	(million pounds)		(%)	
1988 Q2 to 1989 Q1				
West	166.2	166.0	-0.2	-0.1
East	362.7	363.4	0.7	0.2
Canada	529.0	529.4	0.4	0.1
1989 Q2 to 1991 Q1				
West	159.4	158.5	-0.9	-0.5
East	356.6	355.4	-1.2	-0.3
Canada	515.9	513.9	-2.0	-0.4

Over the total period, the most significant relative contraction in hog marketings would come from the Atlantic provinces, Saskatchewan, British Columbia and Quebec. This is evident because their participation in the national tripartite program with no phasing out period means they would have to give up more generous payments under provincial stabilization programs.

The national average hog price would display relatively few differences from the status quo situation (Figure 5). The highest price difference would occur during the subperiod from 1989 Q3 to 1991 Q1, when the national average is simulated to be a little less than 1% above what it would likely be if current stabilization programs were continued unchanged, as described under the status quo situation.

The full tripartite option, however, would produce farm cash receipts 1.5% below those of the status quo for the subperiod extending from 1988 Q4 to 1991 Q1 (Figure 6). Some attention therefore must be given to the reasons why such discrepancies are forecast for this

FIGURE 5 PRICE OF INDEX 100 HOGS, DRESSED, UNDER STATUS QUO AND FULL TRIPARTITE OPTIONS, CANADA, 1986-91

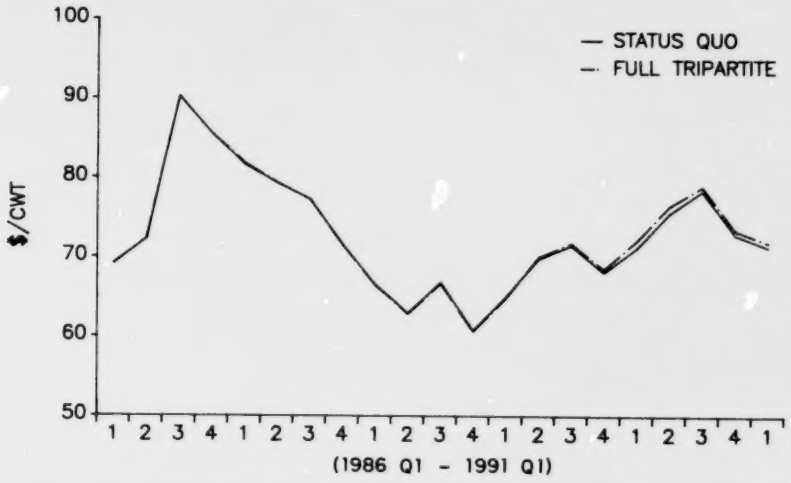
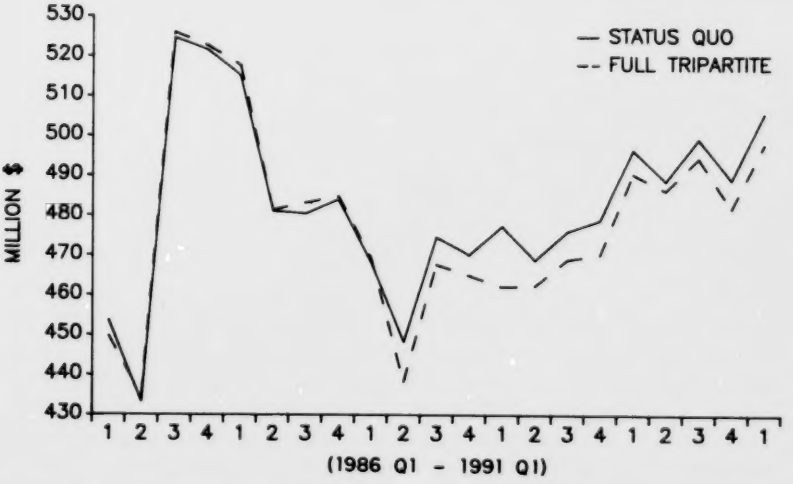


FIGURE 6 FARM CASH RECEIPTS FROM HOGS UNDER STATUS QUO AND FULL TRIPARTITE MODELING OPTIONS, CANADA, 1986-91



factor. By splitting total farm cash receipts into two groups, namely, those received from the market on the one hand and those resulting from net stabilization payments on the other hand, one can see that there would indeed be two adjustment subperiods during the next five years under this option (Table 10).

TABLE 10 CASH RECEIPTS FROM THE MARKET AND FROM NET STABILIZATION PAYMENTS UNDER STATUS QUO AND FULL TRIPARTITE MODELING OPTIONS, CANADA, TWO SELECTED TIME PERIODS 1986-91

	Status quo	Full tripartite	Difference	
			Actual	Percentage
	(million pounds)		(%)	
1986 Q1 to 1988 Q3				
From the market				
West	1 649	1 646	-3.0	0.0
East	3 609	3 612	3.0	0.0
Canada	5 258	5 258	0.0	0.0
From stabilization programs				
West	8.3	3.9	-4.4	-53.0
East	18.4	13.4	-5.0	-27.2
Canada	26.7	17.3	-9.4	-35.2
1988 Q4 to 1991 Q1				
From the market				
West	1 470	1 468	-2.0	-0.1
East	3 278	3 278	0.0	0.0
Canada	4 748	4 746	-2.0	-0.0
From stabilization programs				
West	20.4	10.9	-9.4	-46.3
East	82.4	23.9	-58.5	-71.0
Canada	102.7	34.8	-67.9	-66.1

The first adjustment would take place between 1986 Q1 and 1988 Q3, during which total cash receipts would remain about the same as under the status quo situation. Stabilization payments would show a very slight difference between full tripartite and status quo options over this subperiod only because no payment is foreseen for the period. Since the tripartite premium is less than the relevant provincial

premiums, cash receipts from stabilization, by being less negative, are equilvalent to an increase in net stabilization payment.

The second adjustment would take place between 1988 Q4 and 1991 Q1. Total cash receipts simulated for the hog industry would be slightly less than under the status quo situation. A very minor part of this discrepancy can be imputed to lower cash receipts from market sales. The largest part of it would come from stabilization payments that would be lower than those foreseen under the status quo scenario. In total, net stabilization payments received by producers under the full tripartite option during this whole period would be equal to $34.8 million, compared with $102.7 million under the comparable status quo forecast.

The hog producers most affected by reduced stabilization payments, relatively speaking, would be those in the Atlantic provinces, British Columbia, Quebec and Saskatchewan. Quite to the contrary, producer groups from Manitoba, Ontario and Alberta would be better off. They would benefit from the small increase in price resulting in small increases in total cash receipts under the full tripartite option, compared with the status quo scenario.

Other comparisons between the full tripartite and status quo options show negligible differences. The value of exports during the latter part of the period would be slightly higher under the full tripartite option. Shifts of receipts from one Canadian region to another would be negligible since shifts in hog production from one region to another strictly because of the change from the present range of stabilization programs to full tripartite would be very marginal, even as late as the early 1990s.

5.3 No intervention option

This option assumes all stabilization programs in Canada affecting the hog/pork industry are removed, as well as countervailing duties imposed by the U.S. government.

During most of the 1986-91 forecast period, a policy option of no intervention would result in significantly lower levels of national hog production and marketings (Figure 7). The exception would be during a short subperiod from 1988 Q2 to 1989 Q1. Expansion in national production would continue during this brief period, and total hog marketings would reach almost the same record peak of 15.5 million head marketed as attained in 1988 under the status quo situation.

The reduction in hog production would not be distributed evenly across the regions of Canada, however (Table 11). Only Manitoba would actually see an increase, which could amount to 1.3% In Ontario the reduction would be negligible. Any loss to these two provinces in production, marketing and payments under the no

intervention simulation would be compensated for by the higher prices realized through the elimination of the U.S. countervailing duties. Other provinces would experience declines ranging from 8.4% to 1.5%. In most provinces, the drop would be mainly due to the disappearance of the relevant provincial stabilization programs.Canada's net international balance of hog/pork trade under a no intervention option would decline by 9% in volume.

The national average hog price would exceed by a significant margin the price attained under the status quo scenario throughout the forecast period (Figure 8). Regionally, the difference in price under the no intervention option compared with the status quo situation would range between 1.9% in Ontario and 2.3% in Saskatchewan (Table 12). In the forecast scenario, the decline in production does not even compensate for the decrease in consumption resulting from higher prices. Consequently the hog surplus in eastern Canada would increase by 24% on average under this option during 1986-91. Consequently, the price would not increase by the full amount of the tariffs imposed.

TABLE 11 QUARTERLY HOG MARKETINGS UNDER STATUS QUO AND NO INTERVENTION MODELING OPTIONS, CANADA, 1986-91

	Status quo	No intervention	Difference	
			Volume	Share of status quo
	(thousand head)			(%)
B.C. 83.9	87.4	-2.5	-2.8	
Alberta	506.7	499.1	-7.6	-1.5
Saskatchewan	196.6	180.1	-16.5	-8.4
Manitoba	433.7	438.2	5.5	1.3
West	1226.9	1204.8	-22.1	-1.8
Ontario	1163.8	1162.6	-1.2	-0.1
Quebec	1176.6	1168.5	-8.1	-0.7
Atlantic	146.6	138.6	-8.0	-5.5
East	2487.0	2469.7	-17.3	-0.7
Canada	3713.9	3674.5	-39.4	-1.1

FIGURE 7 TOTAL HOG MARKETINGS UNDER STATUS QUO AND NO INTERVENTION MODELING OPTIONS, CANADA, 1986-91

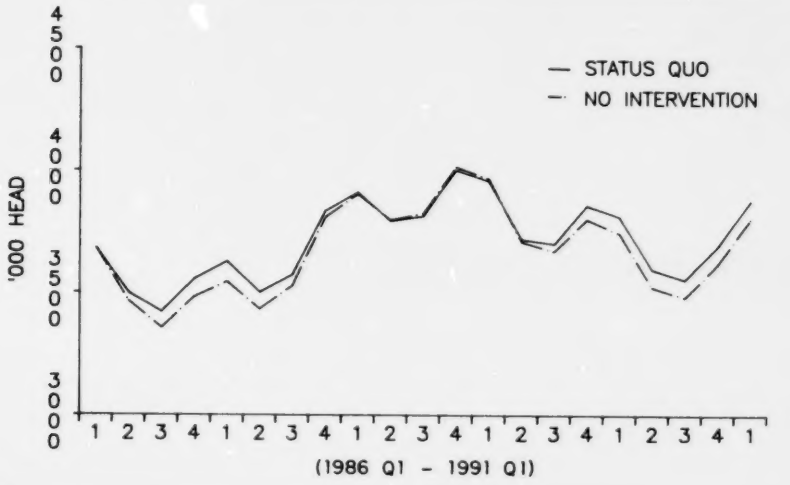


FIGURE 8 PRICE OF INDEX 100 HOGS, DRESSED, UNDER STATUS QUO AND NO INTERVENTION MODELING OPTIONS, CANADA, 1986-91

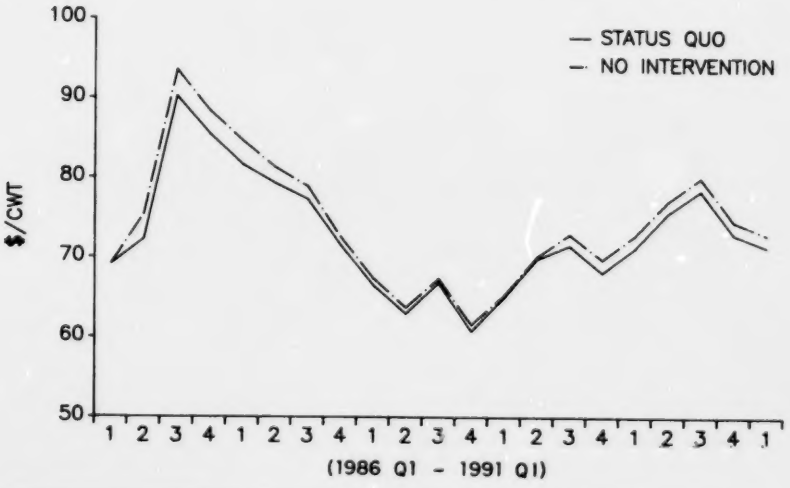


TABLE 12 PRICE OF INDEX 100 HOGS, DRESSED, UNDER STATUS QUO AND NO INTERVENTION MODELING OPTIONS, CANADA, 1986-91

	Status quo	No intervention	Difference	
			Volume	Share of status quo
	($/cwt)			(%)
Alberta	70.8	72.3	1.5	2.1
Saskatchewan	70.2	71.8	1.6	2.3
Manitoba	70.7	72.2	1.5	2.1
Ontario	73.4	74.8	1.4	1.9
Canada	72.8	74.3	1.5	2.1

Farm cash receipts for hogs under this option would exceed the level attained under the status quo situation during the first part of the period until 1987 Q4 (Figure 9). All provincial groups would experience increased sales value under freer North American trade, with the exception of Saskatchewan producers. Farm cash receipts would fall very significantly below the status quo level between 1988 Q1 and 1989 Q2. As a consequence, all provinces would suffer decreased sales values, with the exception of Manitoba. Then during the final subperiod between 1989 Q3 and 1991 Q1, the level of farm cash receipts under the no intervention option would gradually rise to the level attained under the status quo situation. During this final subperiod, Manitoba and Ontario would likely fare better under freer North American hog/pork trade than under the status quo arrangements, while other provinces would be worse off.

Total cash receipts would drop by an average of $1.5 million or 0.36% per quarter over the period. Stabilization payments would of course be zero, compared with $125 million under the status quo situation.

Because of the drop in Canadian demand and production under the freer North American market scenario, compared with the status quo situation, the value-added in the pork primary cuts industry in Canada would fall quite significantly.

5.4 Supply management options

Various options are developed for the future perspective to measure the probable consequences of adopting supply management programs

for the hog/pork industry in Canada. The scenarios are based on different assump-tions regarding the level of exports and imports, and on the relationship between domestic hog prices and production costs. For comparative purposes, variations of the supply management option are included in the simulation exercise to measure the effects of different conditions that may have prevailed in the system (Table 13).

TABLE 13 COMPARISON OF FEATURES OF SUPPLY MANAGEMENT OPTIONS

	Supply management option				
	No exports	Median	Low price	High price	High exports
Exports as a share of production (%)	0	10	10	10	25 (10 toROW; 15 to U.S.)
Production cost ($/cwt)	78	78	70	85	78
Producer price formula	domestic price	blended 90-10	blended 90-10	blended 90-10	blended 75-25
Production as a share of national demand (%)	100	111.05	111.05	111.05	133

ROW is rest of the world

For example, with exports assumed to be at a level of 10% of production, the overall price received by the hog producer could have been a "blended" price comprised of the domestic price for 90% of production and the equivalent of a U.S. price, adjusted for appropriate handling and transportation costs, for the remaining 10% of production. Alternatively, with an export level of 25% of production, the "blended" price could have been based on the domestic price for 75% of production and on the adjusted U.S. price for the remaining 25% of production. Finally, the Canadian domestic price could have been reduced to $70/cwt or raised to $85/cwt during 1986 Q1.

Production quotas in each province are determined by historical production in each province from 1981 Q1 through 1985 Q4. This selection of the base period has a fundamental influence on regional distribution of production in Canada and on the associated movement of hogs and pork products both within Canada and in export trade. No stabilization payment programs would exist, nor would U.S. CVDs on hogs and pork be imposed.

Variations of the supply management option are based on alternative assumptions regarding the level of net exports to be included in the scenarios, (zero, 10% and 25% of production), and the initial price level ($70/cwt, $78/cwt and $85/cwt in 1986 Q1).

The domestic price is set equal to the cost of production, (e.g., $78/cwt for 1986 Q1), and is adjusted forward by an appropriate cost of production index throughout the forecast period. In some variations, the overall price received by the hog producers is a "blended" price comprised of, for example, the domestic price for 90% of production and the equivalent of a U.S. price, adjusted for appropriate handling and transportation costs, for the remaining 10% of production, which is exported.

None of the various supply management alternatives would yield national levels of production and marketing of hogs higher than those attained under the forecast status quo (Table 14). Regionally, the reduced production levels would be greatest in western Canada and least in Quebec.

FIGURE 9 FARM CASH RECEIPTS FOR HOGS UNDER STATUS QUO AND NO INTERVENTION MODELING OPTIONS, CANADA, 1986-91

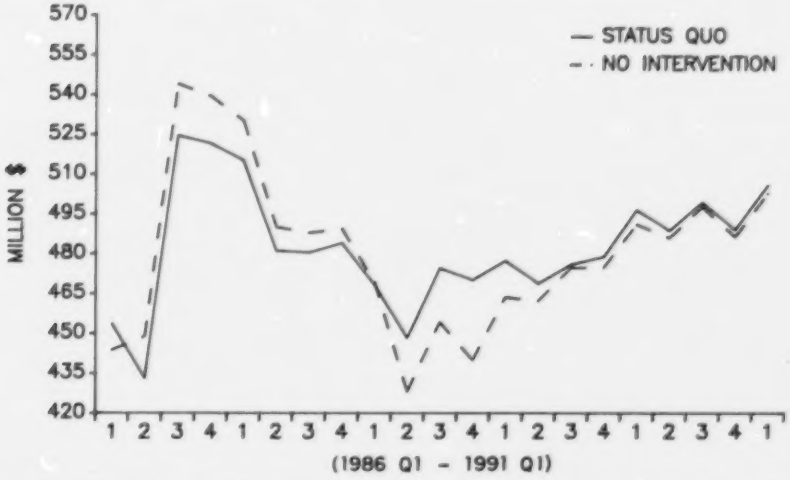


TABLE 14 DIFFERENCE IN QUARTERLY HOG MARKETINGS FROM STATUS QUO ESTIMATES FOR 5 SUPPLY MANAGEMENT MODELING OPTIONS, CANADA, 1986-91

	Supply management option				
	No exports	Median	Low price	High price	High exports
	(thousand head)				
B.C. -23.51	-16.20	-14.32	-17.82	-1.47	
Alberta	-168.60	-131.32	-121.76	-139.59	-56.24
Saskatchewan	-64.20	-49.60	-45.86	-52.84	-20.20
Manitoba	-157.30	-126.82	-119.00	-133.58	-65.43
West	-413.62	-323.90	-300.94	-343.83	-143.34
Ontario	-321.18	-228.26	-204.44	-248.87	-41.16
Quebec	-289.81	-192.02	-166.95	-213.72	4.89
Atlantic	-38.43	-26.50	-23.44	-29.14	-2.48
East	-649.42	-446.78	-394.82	-491.73	-38.75
Canada	-1063.03	-770.71	-695.76	-835.55	-182.08

See Table 13 for definitions of options.

TABLE 15 PRICE OF INDEX 100 HOGS, DRESSED, UNDER STATUS QUO AND 5 SUPPLY MANAGEMENT MODELING OPTIONS, CANADA, 1986-91

	Alberta	Saskatchewan	Manitoba	Ontario	Canada
			($/cwt)		
Status quo	70.79	70.25	70.73	73.37	72.78
Supply management options:					
No exports	79.50	79.50	79.50	79.50	79.50
Median	79.56	79.56	79.56	79.56	79.56
Low price	71.52	71.52	71.52	71.52	71.52
High price	86.59	86.59	86.59	86.59	86.59
High exports	79.65	79.65	79.65	79.65	79.65

See Table 13 for definitions of options.

Under all supply management options featuring net exports of hogs and pork, however, it is assumed that exports from eastern Canada to other countries would increase from the 18.9 million pounds forecast under the status quo to as much as 50.8 million pounds. In those scenarios featuring high levels of exports (i.e., 25% of Canadian production), exports to the U.S. from eastern Canada would also be expanded. At the same time, shipments of hogs from western to eastern Canada would increase significantly. Exports from western Canada to the U.S. and other countries are assumed to zero in all supply management scenarios.

With the exception of a brief period from mid-1986 to mid- 1987, prices under the supply management options would exceed the price established during the 1986 base period under the status quo situation (Table 15). By far the highest price would be attained under the high price level scenario.

However, only one of the various supply management options, namely, that featuring high exports, would yield cash receipts in excess of those attained under the status quo situation. In fact, the option producing the highest price actually results in a level of cash receipts that is below the level gained under the status quo scenario.

Comparison of prices with cash receipts from hogs reveals that high prices do not guarantee the highest receipts to hog producers. The modeling exercise suggests that the volume of exports and consequently production would be more critical than price in influencing the income of hog producers. The income gained from exporting the surplus hogs to the U.S., where a small price change induces a large change in the quantity purchased, would tend to outweigh the income produced through the higher prices and restricted production under most of the supply management options. The reduction in hog cash receipts would be proportionately greater in western than in eastern Canada under several of the supply management options.

6.0 SUMMARY

The largest average hog marketings, net exports and cash receipts would be generated under the current policies (status quo) in the forecast period 1986-91. Producer prices, however, would be lowest under this option (Table 16).

TABLE 16 COMPARISON OF HOG MARKETING OPTIONS, AVERAGE QUARTERLY VALUES, 1986-91

	Status quo	National tripartite	No intervention	Supply management[a]
Hog marketings (000 head)				
Canada	3714	3704	3675	2943
East	2487	2482	2470	2040
West	1227	1222	1205	903
Pork net exports (million pounds)				
Canada	124.2	123.6	114.2	42.3
East	87.8	87.5	83.6	42.3
West	36.4	36.1	30.6	0
Prices ($/cwt)	72.78	72.96	74.30	79.56
Cash receipts ($ million)				
Canada	483	479	481	418
East	333	330	332	294
West	150	149	149	124

[a]Median price and export level.

Differences among the status quo, tripartite and no intervention options are relatively small, especially for production (less than 1%) and for exports and prices (2%). Cash receipts under tripartite and no intervention are marginally lower than under status quo. Part of the reason for these small changes over 1986-91 is related to lagged response, limiting production change during the start-up period. As well, the pork market is forecast to be relatively strong during this 1986-91 period (expanding production and good profitability). The differences among programs also vary considerably more by time period; obviously the better the safety net, the higher the payment during periods of low prices. The extent and duration of low prices is therefore a major factor in comparing these programs. Regionally,

these changes among programs are more significant than the national average, with the major changes being experienced in those provinces currently having the greatest stabilization assistance: Quebec, Saskatchewan, British Columbia and the Atlantic provinces.

The supply management option provides quite a different impact from that of the two other program changes. Under the supply management option, hog marketings are expected to be 21% lower and prices $6.78/cwt ($14.90/per hundred kilograms) higher. This results in cash receipts being 13% lower than under the status quo. Even under the high price supply management option, cash receipts are 7% lower than under the status quo. It is only under the option where exports would amount to 25% of domestic production that cash receipts would exceed status quo, and even then it would not occur in all provinces. Regionally, supply management could have an important impact, since establishing quotas on a historical production pattern freezes regional distribution of production. Historically, production has varied widely across provinces.

Supply management compares more favorably during periods of low exports if producers fill production quotas. For example, during historical period 1975-85, the median supply management option would have generated only 2% less cash receipts (compared with 13% less than would be expected in 1986-91). Prices would have been lower than under the status quo option.

Thus, comparison among options will be influenced by the nature of the hog market. During a period of strong markets, stabilization programs are less important. The converse is true in weak markets. The 15-year period 1975-91 included in this analysis provides a good "typical" period and enables a good comparison of differences among options.

Finally, implications for consumers, for the processing and distribution firms and for government expenditures would also be important considerations, which would need to be part of a more comprehensive evaluation of marketing systems.